SpanStructure™

Lesson Directions Overview

Equipment List

- 4 Balsa Wood Sets (quantities below are per set)
  - 12 Pieces (36"L x 3/16"W x 3/16"H)
  - 6 Pieces (36"L x 1/4"W x 1/4"H)
  - 6 Pieces (36"L x 1/8"W 1/2"H)
  - 4 Pieces (36"L x 3/8"W x 3/8"H)
  - 3 Pieces (36"L x 4"W 1/8"H)
- 4 Glue Bottles
- 4 Steel Plates
- 1 Set Weighted Beanbags

Learning Objectives

1. Identify and describe three types of bridges.
2. Apply the Engineering Design Process to build and improve simple bridge models.
3. Observe how different bridge designs respond to weight and find ways to improve their strength.
4. Analyze how the structural differences between beam, arch, and suspension bridges.
5. Demonstrate an understanding of tension and compression within a bridge.

Grade Levels: 3-8

Vocabulary Covered

- Arch Bridge
- Beam Bridge
- Suspension Bridge
- Tension
- Compression

Next Generation Science Standards

- 3-5-ETS1-1
- 3-5-ETS1-2
- 3-5-ETS1-3
- 3-PS2-1
- 3-PS2-2
- MS-ETS1-1
- MS-ETS1-2
- MS-ETS1-3
- MS-PS2-2